

REMARKS

Claim 1 is presently under consideration in the application. Claim 1 has been amended to incorporate the features of claims 2 and 3, now canceled. Favorable reconsideration of the application, as amended, is respectfully requested.

I. REJECTION OF CLAIMS 1-3 UNDER 35 USC §102(b)/103(a)

Claims 1 and 2 stand rejected under 35 USC §102(b) based on *Ohno et al.*
Claim 3 stands rejected under 35 USC §103(a) based on *Ohno et al.* in view of *Deguchi et al.*

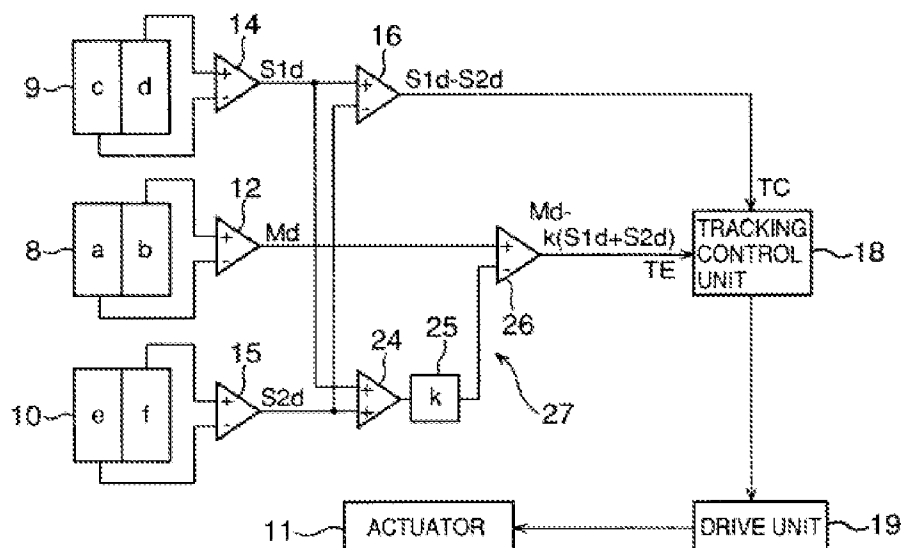
Applicants have amended claim 1 to include the features of claims 2 and 3. As such, claim 1 defines a tracking error signal generation device that includes, *inter alia*, a displacement amount detection section for detecting a displacement amount of the main beam push-pull signal from a reference value based on the main beam push-pull signal from a reference value based on the main beam push-pull signal and the sub beam push-pull signal. In particular, the displacement amount detection section adds the main beam push-pull signal and the sub beam push-pull signal and detects the addition result as a displacement amount of the main beam push-pull signal from the reference value. The tracking error signal generation section generates a tracking error signal by correcting the main beam push-pull signal based on a low frequency component of a signal representing the displacement amount detected by the displacement amount detection section.

For example, Fig. 1 of the present application illustrates how a displacement amount detection section 40 detects a displacement amount detection signal LS as follows:

$$LS = G \times (M_{pp} + \alpha \times S_{pp}) \dots\dots (\text{Equ. 3}).$$

As is clear from Equ. 3, the displacement amount detection signal LS is represented by the adding the main beam push-pull signal Mpp and the sub beam push-pull signal Spp and detects the addition result as a displacement amount of the main push-pull signal Mpp from the reference value. Stated differently, the displacement amount detection does not simply produce a displacement amount by subtracting the sub beam push-pull signal Spp from the main push-pull signal Mpp.

FIG.10
Ohno et al.



In rejecting original claim 2, the Examiner points to Fig. 10 of *Ohno et al.* (reproduced above). In particular, the Examiner refers to element 26 as representing the displacement amount detection section which adds the main beam push-pull signal and the sub-beam push-pull signal and detects the addition result as a displacement amount of the main-beam push-pull signal from the reference value. (See, O.A., paragraph bridging pages 3-4).

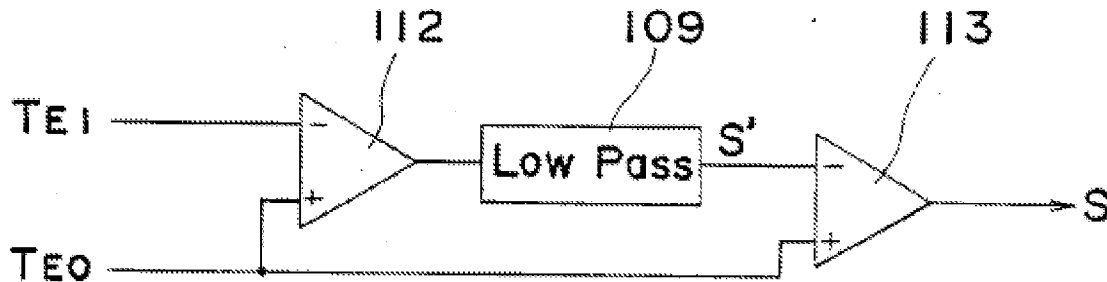
As is noted in Fig. 10 of *Ohno et al.*, element 10 represents a differential amplifier having an inverting input (-) and a non-inverting input (+). Thus, the signal input to the inverting input of the differential amplifier 26 is subtracted from, not added to, the input of the non-inverting input. This is further evidenced by the detailed description in *Ohno et al.* in which the differential amplifier 26 is described as outputting a signal (Md-k(S1d+S2d) which indicates a difference between the push-pull signal Md from the amplifier 12 and the signal k(S1d+S2d) from the amplifier 25. (Col. 12, Ins. 26-37).

Thus, a comparison of Equ. 3 in the present application and the output of differential amplifier 26 illustrates that *Ohno et al.* does not teach or suggest a displacement amount detection section that adds the main beam push-pull signal and the sub beam push-pull signal and detects the addition result as a displacement amount of the main beam push-pull signal from the reference value. The approach taught in *Ohno et al.* depends on a calculation of a difference between the Md and Sd signals as illustrated in Fig. 10 and described at Col. 12, lines 26-37.

Still further, claim 1 recites the feature of original claim 3 in which the tracking error signal generation section generates a tracking error signal by correcting the main beam push-pull signal based on a low frequency component of a signal representing the displacement amount detected by the displacement amount detection section.

The Examiner points to Figs. 2 and 9 of *Deguchi et al.* as teaching a tracking error signal device wherein the tracking signal error generation section generates a tracking error signal by correcting the main beam push-pull signal based on a low frequency component of a signal representing the displacement amount detected by the displacement amount detection section.

Fig. 9 **Deguchi et al.**



Referring to Fig. 9 of *Deguchi et al.* (reproduced above), the Examiner indicates that the main beam push-pull signal is represented by T_{EO} . The Examiner states that the low frequency component of the displacement amount signal is represented by the signal S' that is output from the low pass filter 109. (See, O.A., paragraph bridging pages 4-5).

Applicants respectfully submit, however, that *Deguchi et al.* suffers from the same deficiencies pointed out above with respect to *Ohno et al.* The low pass filter 109 in *Deguchi et al.* admittedly filters the output of the differential amplifier 112. However, the output of the differential amplifier 112 does not constitute a signal representing the displacement amount detected by the displacement amount detection section in accordance with the claimed invention.

Similar to *Ohno et al.* discussed above, the differential amplifier 112 in *Deguchi et al.* includes an inverting input (-) and a non-inverting input (+). The differential amplifier 112 subtracts the signal input to the inverting input from the signal input to the non-inverting input. To the extent the Examiner may feel the output of the differential amplifier 112 representing the difference between T_{EO} and T_{E1} represents a displacement amount signal, clearly such output does not represent an addition of a main beam push-pull signal and a sub beam push-pull signal representing a

displacement amount of the main beam push-pull signal from a reference value as recited in amended claim 1.

Consequently, the filtered output of low pass filter 109 cannot represent a tracking error signal generated by correcting the main beam push-pull signal based on a low frequency component of a signal representing the displacement amount detected by the displacement amount detection section in the context of the claimed invention. *Deguchi et al.* is deficient in the same way as *Ohno et al.* in that neither teach or suggest arriving at a displacement amount signal based on an addition as claimed. Thus, neither can provide tracking operation based on such a displacement amount signal as claimed.

For at least the above reasons, applicants respectfully submit that *Ohno et al.* and *Deguchi et al.*, taken alone or in combination, do not teach or suggest each and every feature recited in claim 1. Applicants respectfully request withdrawal of the rejection.

II. CONCLUSION

Accordingly, claim 1 is believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Application No.: 10/784,318

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

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